Montana Fish, Wildlife & Parks

1400 So. 19th
Bozeman, MT 59718

September 23, 2002

Greetings:

Attached for your information is a supplement to a decision I issued in July 2001 regarding plans to attempt to eliminate New Zealand Mudsnails (NZMS) from the Darlinton Ditch using a molluscicide treatment.

I have decided not to proceed with the proposed treatment of the Darlinton Ditch with a molluscicide to treat the invasion of NZMS. My decision is based on the results of our bioassays for the molluscicide, and the recent discovery of NZMS in the Madison River a few miles above Darlinton Ditch.

Thank you for your continued interest in the management of Montana's fisheries.

Sincerely,

Patrick J. Flowers
Region 3 Supervisor

Madison Misc

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DARLINTON DITCH NEW ZEALAND MUDSNAIL CONTROL PROJECT
SUPPLEMENTAL DECISION NOTICE

MONTANA FISH, WILDLIFE & PARKS
REGION 3, BOZEMAN
September 23, 2002

In July 2001, Montana Fish, Wildlife & Parks issued a Decision Notice to remove the invasive non-native New Zealand Mudsnail (NZMS) from a section of Darlinton Ditch using the molluscicide Bayluscide. An Environmental Assessment (EA) preceded that Decision Notice in May 2001. The Decision Notice issued in 2001 stated the Bayluscide treatment was provisional pending the results of bioassays. In the EA and the July 2001 Decision Notice, we acknowledged that the concentration of Bayluscide necessary to kill the NZMS would result in mortality to fish as well.

Bioassays were conducted to determine the Bayluscide concentration necessary to kill NZMS, effective treatment time, and neutralization techniques. To conduct the bioassays, NZMS and water from Darlinton Ditch were collected and transported to a lab facility in Helena. Twenty NZMS were placed in quart jars and exposed to various concentrations of Bayluscide for up to 24 hours, then placed in fresh water for 24 –136 hours to determine if they would recover from the treatment. All jars were aerated and included a sprig of aquatic vegetation to provide food to the snails. Bayluscide killed 100 percent of test snails exposed to at least 48 exposure units of Bayluscide. An exposure unit is attained by multiplying the Bayluscide concentration in mg/l (ppm) by the number of hours of exposure, so 4 mg/l x 12 hours of exposure = 48 exposure units.

Additional bioassays were conducted to test the ability of potassium permanganate to neutralize the Bayluscide. Potassium permanganate concentration of about 2 mg/l is effective in neutralizing the fish control pesticides rotenone and antimycin relatively quickly. However, significant neutralization of 4 mg/l Bayluscide did not occur until 24 hours of exposure to 50 mg/l potassium permanganate.

An additional factor that must now be considered is the detection of NZMS in the Madison River near the Norris Bridge, only a few miles upstream of the Darlinton Ditch head gate. These NZMS were found in samples collected in August 2001. Prior to this discovery, the nearest population of NZMS to Darlinton Ditch was in the Madison River near Quake Lake, over 70 river miles upstream of the Darlinton Ditch head gate. Since Darlinton Ditch transports irrigation water from the Madison River, NZMS will undoubtedly invade the ditch with river water.

While we have determined that Bayluscide will effectively kill NZMS, I have decided not to proceed with the treatment of Darlinton Ditch due to the inability of potassium permanganate to quickly neutralize the Bayluscide and the near proximity of a new and unstoppable source of NZMS to Darlinton Ditch. The risks of conducting a treatment at this time outweigh the benefits. Those risks include impacts of the Bayluscide to fish populations downstream of the treatment area, including an area of the Madison River where the ditch returns water to the river.

Though FWP will not implement the treatment to eradicate NZMS from Darlinton Ditch, we will consider such treatments in the future for NZMS and other invasive aquatic species where those treatments are feasible. We anticipate invasions of Aquatic Nuisance Species into Montana waters will only increase in the future and become a major resource management issue for FWP.

Pat Flowers

Patrick J. Flowers
Regional Supervisor

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